

SALIN DEVICE – HELPS IN PREVENTING AND TREATING OTITIS MEDIA IN CHILDREN

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Besides other natural remedies that aim at improving the quality of life, Salin brings back the old concept that every salt mine is a house of health.

The method consists in: forced passing of the air through plates with sediment layers of microcrystallized sodium, calcium and magnesium salts, having an air ionization effect, reducing the carbon dioxide, reducing the bacteria content, smoke and odors indoor and helps increase the fluidity of the airways secretions through quality modifications of the mucus.

The high morbidity rate due to nonsuppurative otic pathology in children, knowing that 80% of infants up to 3-4 years old had at least once an ear inflammation with consequences like impaired hearing due to chronic otitis, made us initiate a study on an alternative and complementary method for preventing and curing nonsuppurative otitis (seromucous acute and chronic otitis media).

MATERIALS AND METHOD

The clinical and paraclinical introspective and retrospective study (otoscopy, audioimpedantmetry, allergic tests) of a lot of patients with nonsuppurative acute or chronic otic pathology registered in the outpatient's ENT consulting room of the 'Spitalul clinic de Urgenta nr. 3 de copii Louis Turcanu' in Timisoara City, Romania (Louis Turcanu, # 3 Clinic Emergency Hospital for Children)

The lot parameters are as following:

Lot	63 patients
Gender	29 boys 34 girls
Age	between 1 and 18
Average age	6.9

The study goal is to compare the lot of 63 patients with otic pathology between 01/01/2000 and 31/12/2000, without Salin device (1st LOT) with the same lot using the Salin device between 10/01/2001 and 31/01/2002.

The target of the study is to asses the contribution of Salin device in helping the amelioration and treatment of the respiratory and ear disease and prevention of reoccurrence of nonsuppurative otitis.

The parameters studied are:

- Monthly monitoring of the general clinical state of the patient along with the respiratory and ear symptoms, using a questionnaire filled up by the patient and/or parent
- Otomicroscopy- monthly and during periods when symptoms were more acute
- Audioimpedantmetry - monthly and during periods when symptoms were more acute
- Allergic tests for some patients



Salin device for the 2nd LOT was supplementary introduced along with the appropriate medical or surgical treatment

In the study lot, the otic pathology was prevalent and the comorbidities were:

- Adenoiditis / chronic adeno-tonsillitis, 21 cases (33%)
- Rhinitis / chronic rhino- sinusitis in 17 cases (27%)
- Bronchial asthma in 5 cases (8%)
- Atopic dermatitis in 2 cases (3%)

Salin device was put to work on an average of 10 hours a day, at a 9 V voltage. All patients followed the regular medical or surgical therapy suitable for each case.

RESULTS AND COMMENTS

1st LOT – without Salin device

The respiratory symptoms (sneeze, rhinorrhea, nasal obstruction, cough, otalgia, hearing impairment, fever) were present in moderate or severe form in 49 cases (77%) as isolated or associated symptoms.

At otomicroscopy the tympanic modifications were obvious in Valsalva test in 58 cases (92%). Audioimpedantmetry showed tympanigrams type B (73%) and type C (27%)

The allergic tests were positive in 5 cases with asthma and in 3 cases with chronic rhinitis.

2nd LOT – with Salin device

- Respiratory and otic symptoms were present in severe or moderate form in 28 patients (44%)
- Otomicroscopy showed tympanic modifications in 41 cases (65%)
- Audioimpedantmetry showed tympanigrams type B (24%), type C (53%) and type A (23%). Tympanigrams B signals the absence of the air in the middle ear and the possible presence of the fluid in the middle ear; tympanigrams C signals the partial absorption of the air from the middle ear and its gradual replacement with transsudate or exsudate. Tympanograms A shows the presence of the air in the middle ear and normal mobility of the tympano-ossicular system. Tympanograms B and C were associated with slight or moderate hearing impairment.
- The allergic tests were positive in 5 cases of asthma.
- The reoccurrence of otitis diminished to 1 outburst a year comparing to 2 outbursts a year for the 1st LOT

CONCLUSIONS

1. Alleviation of clinic severe and medium symptoms for 33% of the patients along with improvement of respiratory quality and intellectual and physical effort, are clinical arguments that cannot be neglected giving Salin a well-deserved place in medical treatments.
2. Salin helps diminishing macroscopic modifications of the tympanum in 27% of the patients, thus justifying alleviation of otitis clinic symptoms like (otalgia, autophony, decreased hearing)



3. Audioimpedantmetry, the best diagnostic method of nonsuppurative middle ear pathology (without perforation), shows the changes from pathology (24% compare to 73% tympanograms type B, 27% compare to 53% tympanograms C) to normal (from 0% to 23 % of Tympanograms A); all these facts show an improvement in tubo-tympanic drainage.
4. Better draining of the tubo-tympanum and airing of the tympanic cavity can happen due to modifications of the quality and / or quantity of the mucus as well as due to the favorable effects of the aeroions on the mobility of the respiratory membrane cilia.
5. Besides symptomatic drugs, antibiotics, vitamins and immune-modulators, antialergic, Salin device has been introduced in the therapy protocols in treating rhino-sinuses pathology and acute and chronic otic pathology. The benefits of Salin are evident, since for 50% of the patients there was a reduction of the antibiotics intake and in asthma cases a reduction of corticoids intake.
6. Salin is a beneficial adjuvant, however without excluding the classic therapy, therefore the patients should be under medical observation.
7. In order to strengthen the therapy in bronchial asthma and in nonsuppurative allergic or nonallergic chronic otic pathology, the patient need to undergo 1 or 2 treatments a year in the salt mines becomes costly considering the travel and other afferent expenses. From this point of view, Salin is becoming a cost effective option.
8. The possibility to use the Salin device in the living space strengthens the therapeutic effect of the treatments in the salt mines.
9. The quantity of otic sero-mucous secretion in the first days after tympanotomy significantly decreased and the tympanum reconstruction duration has reduced from 5-7 days to 4.

